

REMARKS**Status of the Claims**

Claims 1, 5, 8-10, 12, 14-18, 29, 42, 45, 48-49, 51, 53-55, 64 and 70 have been amended.

Claims 11, 13, 30, 50, 52 and 65 have been canceled without prejudice or disclaimer.

After entering the claim amendments, Claims 1-10, 12, 14-29, 31-49, 51, 53-64 and 66-70 are currently pending. Applicants hereby request further examination and reconsideration of the presently claimed application.

Claim Amendments

Independent Claims 1 and 42 have been amended to incorporate the limitation of dependent Claims 11 and 50, respectively, that the copolymers are prepared by reacting (a) at least one alpha-olefin, and (b) at least one anhydride of an alpha,beta-ethylenically unsaturated carboxylic acid. Accordingly, claims 11 and 50 have been canceled. Also, Claims 12, 14 and 15 have been amended to depend from independent Claim 1 instead of from canceled Claim 11, and Claims 51, 53 and 54 have been amended to depend from independent Claim 42 instead of from canceled Claim 50.

Claims 29 and 64 have been amended to incorporate the limitations from Claims 30 and 65, respectively, that the black material is "selected from the group consisting of lignite, salt of lignite, organophilic lignite, asphalt, salt of sulfonated asphalt, gilsonite, graphite, ground tires, and any combination thereof." Accordingly, claims 30 and 65 have been canceled.

Claims 5 and 45 have been amended to recite "a" water.

Claims 8, 9, 10, 16, 17, 18, 48, 49, 55 and 70 have been amended to delete the phrase "a blend of" from "a blend of one or more copolymers."

Claims 8-10 and 48-49 have been further amended to specify that the recited average molecular weights are weight average molecular weights.

Additionally, claims 13 and 52 have been canceled.

No new matter has been introduced by any of these claim amendments.

Objections to the Specification

The Examiner objected to the specification on the grounds that Applicant's use of the term "a blend of one or more copolymers" is a contradiction in terms. Applicant respectfully submits that the term is not a contradiction in terms, that it is understood that a "blend of one" copolymer would include just the one copolymer, and that the use of this term throughout the specification does not add any confusion or ambiguity to the specification. Applicant also submits that Examiner's understanding is correct that the polyethylene is intended to be a separate element and is outside the blend of copolymers, as stated by Applicant in paragraph [0021] of the Specification, which provides that "copolymers included within the blend of one or more copolymers preferably differ from the polyethylene that is another component of the drilling fluid composition of this invention." Accordingly, Applicant believes that no amendment to the specification is necessary.

The Examiner also objected to the specification on the grounds that Applicant's use of the term "black material" is not adequately defined in the specification. Applicant has amended paragraph [0034] to particularly define the black material by providing that the "black materials that are added to a drilling fluid composition are selected from the group consisting of lignite, salt of lignite, organophilic lignite, asphalt, salt of sulfonated asphalt, gilsonite, graphite, ground tires, or any combination thereof." Applicant respectfully submits that by specifically identifying a group of materials from which the "black material" can be chosen, Applicant has removed any ambiguity that may have been introduced by the term. Additionally for clarity, Applicant has amended paragraph [0011] to remove the clause that stated that the black materials "do not always work in actual operation."

The Examiner also objected to the specification on the grounds that Applicant's use of the term "base fluid" is unclear. Applicant has amended paragraph [0016] for clarity, so that amended paragraph [0016] now states more clearly that the base fluid may consist of one or more fluids, which combine to create the single base fluid. Consequently, Applicant respectfully submits that the use of the term "base fluid" is clear as written in amended paragraph [0016]. This amendment to paragraph [0016] does not constitute new matter, but rather simply clarifies the already existing content of the specification.

The Examiner also objected to the specification on the grounds that Applicant's use of the term "non-aqueous" is unclear. Furthermore, Applicant respectfully submits that the term "non-aqueous" is clear when read in context of the specification. In amended paragraph [0016] of the specification, Applicant states that sometimes "drilling fluid compositions contain a mixture of fluids, in which case the drilling fluid composition is generally classified by the predominating fluid in the base fluid." Thus, a drilling fluid is generally classified as "non-aqueous" when the predominating fluid in the overall base fluid is non-aqueous, as is the case in the present application. The term was specifically defined in the specification to include emulsions of oil and water. However, to help further clarify the term, Applicant has further amended paragraph [0016] to specify that any such emulsions of oil and water are oil-based emulsions. The addition of the phrase "oil-based" in paragraph [0016] does not constitute new matter because oil-based emulsions are discussed throughout the remainder of the specification.

Claim Objections

Claims 1-70 are objected to because the use of the terms "a blend of one" and the use of "base" are confusing. Applicant respectfully submits that neither term is confusing, for the reasons set forth above. However, for sake of clarity, Applicant has amended Claims 8, 9, 10, 16, 17, 18, 48, 49, 55 and 70 to remove the term "blend of" from such claims.

Claims 5 and 45 are objected to because they state that a component is water, yet dependent claims 7 and 47 state that "the" water is brine. Applicant has amended Claims 5 and 45 to recite "a" water. Applicant submits that this amendment overcomes the objection to Claims 5 and 45.

Claims 13 and 52 are objected to because Examiner questions whether phthalic anhydride is truly "alpha,beta-ethylenically unsaturated" as stated in claims 13 and 52. Applicant has canceled Claim 13 and 52 without prejudice or disclaimer.

Claims 29 and 64 are objected to because of the use of the phrase "black material," as discussed in detail above. Applicant has amended Claims 29 and 64 to incorporate the limitation of Claims 30 and 65 recite that the "black material" is "selected from the group consisting of lignite, salt of lignite, organophilic lignite, asphalt, salt of sulfonated asphalt, gilsonite, graphite,

ground tires, and any combination thereof." Accordingly, Applicant has canceled Claims 30 and 65. Applicant submits that this amendment overcomes the objection by limiting the black material to only the materials recited in Claims 29 and 64.

Claims 39-41 are objected to because Applicant's use of the term "settling" is unclear. Applicant confirms that the term "settling" is intended to mean what is given on pages 15-16 of the specification. Applicant submits that this statement by Applicant, as requested by the Examiner, overcomes the objection to Claims 39-41.

Claims 8-10 and 48-49 are objected to because Examiner asserts that the use of the term "average" is not sufficient because there are multiple types of molecular weight in use. Applicant has amended Claims 8-10 and 48-49 to recite that the average molecular weights are weight average molecular weights. Applicant submits that this amendment overcomes the objection to Claims 8-10 and 48-49. Applicant has also amended paragraph [0025] of the specification accordingly. Applicant respectfully submits that such amendment to the specification does not introduce new matter, but instead just clarifies the already existing contents of the specification.

Claim Rejections Under 35 USC § 102

Claims 1-6, 8-10, 19-20, 23-26, 28, 31-35, 42-46, 48-49, 56, 58-60, 61, 63, 66-68 and 70 stand rejected under 35 USC § 102(b) as being anticipated by Mitacek in U.S. Patent 3,140,747 (*Mitacek*).

Applicant has amended independent Claims 1 and 42 to further recite that "the copolymers are prepared by reacting (a) at least one alpha-olefin, and (b) at least one anhydride of an alpha,beta-ethylenically unsaturated carboxylic acid." *Mitacek* discloses only "copolymers of ethylene and propylene" and does not disclose any copolymers that are prepared by reacting (a) at least one alpha-olefin, and (b) at least one anhydride of an alpha,beta-ethylenically unsaturated carboxylic acid. Accordingly, the above amendments to Claims 1 and 42 obviate the

rejection. Therefore, Applicant respectfully requests that the rejections of independent Claim 1 and its dependent claims 2-6, 8-10, 19-20, 23-26, 28, 31-35 and independent Claim 42 and its dependent claims 43-46, 48-49, 56, 58-60, 61, 63, 66-68 and 70 under 35 USC § 102(b) as being anticipated by *Mitacek* be withdrawn.

Claims 1-2, 8-12, 14-15, 33, 42, 48-51, 53-54 and 68 stand rejected under 35 USC § 102(b) as being anticipated by *Newberry* in U.S. Patent 3,140,747 (*Newberry*).

Applicant has amended independent Claims 1 and 42 to recite that "the copolymers are prepared by reacting (a) at least one alpha-olefin, and (b) at least one anhydride of an alpha,beta-ethylenically unsaturated carboxylic acid." Applicant has incorporated the limitation of Claims 11 and 50 into independent Claims 1 and 42, respectively, but has modified the limitation to recite that "the copolymers are prepared by reacting" instead of "the copolymers are prepared by a reaction that comprises reacting" as was set forth in Claims 11 and 50. Examiner acknowledges that the maleic copolymers disclosed in *Newberry* are treated with an amine or alcohol before being used in the composition disclosed in *Newberry*. The copolymers recited in Claims 1 and 42 as amended are NOT treated with an amine or alcohol, and consequently are different than the copolymers disclosed by *Newberry* and are therefore not disclosed by *Newberry*. Accordingly, the above amendments to Claims 1 and 42 obviate the rejection. Therefore, Applicant respectfully requests that the rejections of independent Claim 1 and its dependent claims 2, 8-10, 12, 14-15 and 33 and independent Claim 42 and its dependent claims 48-49, 51, 53-54 and 68 under 35 USC § 102(b) as being anticipated by *Newberry* be withdrawn. Claims 11 and 50 have been canceled without prejudice or disclaimer, and are no longer under consideration.

Claim Rejections Under 35 USC § 103

Claims 1-12, 14-51 and 53-70 stand rejected under 35 USC § 103(a) as being unpatentable over *Brandt* et al in U.S. Patent 4,306,980 (*Brandt*) in view of *Carnicom* in U.S. Patent No. 4,436,636 (*Carnicom*).

Brandt generally discloses invert emulsion well servicing fluids having oleophilic anhydrides, but does not disclose the use of polyethylene as recited in amended Claim 1 and its dependent Claims 2-10, 12, 14-29 and 31-41 and in amended Claim 42 and its dependent Claims 43-49, 51, 53-64 and 66-70. *Carnicom* generally discloses invert emulsion well servicing fluids having a solid, particulate olefin (such as polyethylene), but does not disclose a copolymer that is prepared by reacting (a) at least one alpha-olefin, and (b) at least one anhydride of an alpha,beta-ethylenically unsaturated carboxylic acid, as recited in amended Claim 1 and its dependent Claims 2-10, 12, 14-29 and 31-41 and in amended Claim 42 and its dependent Claims 43-49, 51, 53-64 and 66-70.

The Examiner asserts that it would have been obvious to combine *Brandt* and *Carnicom* to arrive at the claimed invention, in part because both *Brandt* and *Carnicom* relate to fluids used for the same general purposes as the claimed invention – namely, to reduce settling of particles and to reduce fluid loss when using the fluid.

As set forth by the Examiner in the Office Action, the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art;
2. Ascertaining differences between the prior art and the claims at issue;
3. Resolving the level of ordinary skill in the pertinent art; and
4. Considering objective evidence present in the application indicating obviousness or nonobviousness

The scope and contents of the prior art and the differences between the prior art and the claims at issue are described in detail above, with *Brandt* lacking disclosure of the use of polyethylene as recited in amended Claim 1 and its dependent Claims 2-10, 12, 14-29 and 31-41 and in amended Claim 42 and its dependent Claims 43-49, 51, 53-64 and 66-70, and with *Carnicom* lacking disclosure of a copolymer that is prepared by reacting (a) at least one alpha-olefin, and (b) at least one anhydride of an alpha,beta-ethylenically unsaturated carboxylic acid, as recited in amended Claim 1 and its dependent Claims 2-10, 12, 14-29 and 31-41 and in amended Claim 42 and its dependent Claims 43-49, 51, 53-64 and 66-70.

In addition to those differences described above, Applicant sets forth evidence within the specification indicating the non-obviousness of the claims at issue. In Examples 1 and 2 within the specification, Applicant performs a series of tests on nine different Sample mixtures. The Sample mixtures can be broken down into four basic categories:

- A. Control Sample 1 containing neither PA-18 (a copolymer that is prepared by reacting (a) at least one alpha-olefin, and (b) at least one anhydride of an alpha,beta-ethylenically unsaturated carboxylic acid) nor polyethylene;
- B. Samples 2 and 3, containing PA-18 but no polyethylene;
- C. Samples 4, 5, 6, and 7 containing both PA-18 and polyethylene; and
- D. Samples 8 and 9, containing polyethylene but no PA-18.

Samples 2 and 3 are similar to what is disclosed by *Brandt*; Samples 4, 5, 6, and 7 are similar to what is claimed in the present application; and Samples 8 and 9 are similar to what is disclosed by *Carnicom*. The results of each of the tests performed on Samples 1 through 9 are compared and analyzed in detail within the specification. As stated by Applicant in paragraph [0064] of the specification, only Samples 4, 5, 6 and 7 exhibited superior settling and fluid loss properties relative to Control Sample 1 under all test conditions.

In summary, the Examiner asserts in the Office Action that the fluids of *Brandt* and *Carnicom* are used for the same general purposes as the claimed drilling fluid composition. The drilling fluids of *Brandt* and *Carnicom* were directly compared with the claimed drilling fluid composition within the specification of the present application, with ONLY the claimed drilling fluid composition exhibiting superior properties relative to Control Sample 1 under all test conditions. Despite the fact that the claimed invention exhibited superior properties when used for the same purposes, both *Brandt* and *Carnicom* failed to disclose the claimed invention. The failure of *Brandt* and *Carnicom* to disclose the claimed invention despite its superior properties when used for the same purposes provides clear evidence that the claimed invention is not an obvious variation of the fluids disclosed by *Brandt* and *Carnicom*.

Furthermore, obviousness cannot be established by combining prior art references without some teaching or suggestion supporting the combination. *In re Bell*, 991 F.2d 781, 784, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993). Neither *Brandt* nor *Carnicom* includes any suggestion or motivation to combine the two references. Consequently, the combination of the two references is improper.

For the reasons set forth herein, Applicant respectfully submits that amended Claim 1 and its dependent Claims 2-10, 12, 14-29 and 31-41 and in amended Claim 42 and its dependent Claims 43-49, 51, 53-64 and 66-70 are patentable over *Brandt* in view of *Carnicom*.

Claims 1-70 stand rejected under 35 USC § 103(a) as being unpatentable over *McNally* et al in U.S. Patent 6,159,906 (*McNally*) in view of *Carnicom*.

McNally generally discloses a drilling fluid that contains at least one copolymer reaction product of which the reactants comprise at least one ethylenically unsaturated carboxylic compound and at least one alpha-olefin, but does not disclose the use of polyethylene as recited

in amended Claim 1 and its dependent Claims 2-10, 12, 14-29 and 31-41 and in amended Claim 42 and its dependent Claims 43-49, 51, 53-64 and 66-70. *Carnicom* generally discloses invert emulsion well servicing fluids having a solid, particulate olefin (such as polyethylene), but does not disclose a copolymer that is prepared by reacting (a) at least one alpha-olefin, and (b) at least one anhydride of an alpha,beta-ethylenically unsaturated carboxylic acid, as recited in amended Claim 1 and its dependent Claims 2-10, 12, 14-29 and 31-41 and in amended Claim 42 and its dependent Claims 43-49, 51, 53-64 and 66-70.

McNally has the same shortcomings as a reference as *Brandt* in that *McNally* generally discloses a drilling fluid that contains at least one copolymer reaction product of which the reactants comprise at least one ethylenically unsaturated carboxylic compound and at least one alpha-olefin, but does not disclose the use of polyethylene as recited in Claims 1-70. Consequently, the arguments set forth above as applied to the *Brandt* reference also apply to *McNally*, and the present application contains objective evidence indicating the obviousness of the claimed invention over the well servicing fluids disclosed by both *McNally* and *Carnicom*.

Furthermore, obviousness cannot be established by combining prior art references without some teaching or suggestion supporting the combination. *In re Bell*, 991 F.2d 781, 784, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993). Neither *McNally* nor *Carnicom* includes any suggestion or motivation to combine the two references. Consequently, the combination of the two references is improper.

For the reasons set forth herein, Applicant respectfully submits that amended Claim 1 and its dependent Claims 2-10, 12, 14-29 and 31-41 and amended Claim 42 and its dependent Claims 43-49, 51, 53-64 and 66-70 are patentable over *McNally* in view of *Carnicom*.

CONCLUSION

Consideration of the foregoing amendments and remarks, reconsideration of the application, and withdrawal of the rejections is respectfully requested by Applicants. No new matter is introduced by way of the amendments. It is believed that each ground of rejection raised in the Office Action dated August 9, 2005 has been fully addressed. If any fee is due as a result of the filing of this paper, please appropriately charge such fee to Deposit Account No. 50-1629/210341US. A petition for extension of time is necessary in order for this paper to be deemed timely filed, so please consider this a petition therefore.

If a telephone conference would facilitate the resolution of any issue or expedite the prosecution of the application, the Examiner is invited to telephone the undersigned at the telephone number given below.

Respectfully submitted,

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